

## **Abstract**

**Title:** Influence of temperature on the diving reflex

**Background:** It is likely that the sum of the defense systems of the organism to changes in temperature known as the diving reflex occurs in each individual differently depending on the physical preparedness.

**Objectives:** Check the effect of temperature on performance-diving reflex two different groups - experienced and novice divers. On the basis of experimental testing in hot and cold water, check the reaction of the body to different environmental conditions. Based on the physiological changes in an organism to assess whether it was demonstrated physiological ability of the body, known as the diving reflex.

**Methods:** Experimental testing beginner diver (n = 5) experienced divers (n = 5) in hot water of temperature 20 - 25 ° C and cold water at a temperature of 4-6 ° C in the static apnea. Based on the measured values, changes in the body, heart rate, oxygen saturation, the overriding influence of sympathetic and parasympathetic, concentration and relaxation index to assess the extent of reaction of the organism and the subsequent involvement of the defense systems of the organism, as called diving reflex. To assess the difference between groups were used statistical methods - Cohen da Kolmogorov-Smirnův test.

**Results:** The results of experiments have either at one of the reference body in both groups significant enough differences of measured values in order to indicate reaction of the organism for diving reflex.

**Keywords:** Freediving, diving reflex, diving, physiological reactions, effects of temperature.